DOCUMENT RESUME

ED 135 828 TM 006 053

AUTHOR Manning, Patricia Cripe
TITLE A Validation Study of the Faculty Evaluative Criteria at Florida Technological University.
PUB DATE 75
NOTE 102p.; Ed. D. Dissertation, Nova University

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS College Administration; College Faculty; Effective Teaching; *Evaluation Criteria; *Faculty Evaluation; Graduate Students; Higher Education; *Rating Scales; Reliability; Undergraduate Students; *Validity
IDENTIFIERS Florida Technological University

ABSTRACT

The study was carried out to assess the extent of agreement as to the validity of the Faculty Evaluative Criteria used in the College of Education at Florida Technological University. The assessment was carried out among students, faculty, and administrators. The implementation of collective bargaining and declining state revenue for higher education highlighted the need for an objective and fair means of faculty evaluation. There were three groups of participants: sixty undergraduate and sixty graduate students, forty-six full time faculty members, and eight administrators. Ninety-two percent of the undergraduate and ninety percent of the graduate students returned usable data. Eighty-three percent of the faculty responded and all of the administrators returned usable data. The instrument was altered to a Likert Scale format. Participants rated each item according to their own perception of the relative importance of each. The ratings were assessed using item frequency distributions, item variances, correlations, internal consistency of the scales, and standard errors of measurement. The data were treated with multivariate analysis of variance and plotted in the smallest space according to multidimensional scaling. Conclusions and recommendations are presented. (RC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED135828

A Validation Study of the Faculty Evaluative Criteria at Florida Technological University

PATRICIA CRIPE MANNING

A MAJOR APPLIED RESEARCH PROJECT
PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

1975

TM006 053

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Abstract of a Major Applied Research Project Presented
to Nova University in Partial Fulfillment of the
Requirements for the Degree of Doctor of Education

A VALIDATION STUDY OF THE FACULTY EVALUATIVE CRITERIA AT FLORIDA TECHNOLOGICAL UNIVERSITY

By
Patricia Cripe Manning

December, 1975

The study was carried out to determine the extent of agreement as to the validity of the Faculty Evaluative Criteria Instrument used in the College of Education at Florida Technological University. The criteria were utilized as the basis for faculty evaluation for promotion and salary considerations at Florida Technological University. The degree of agreement was assessed among undergraduate and graduate students, faculty and administrators within the College of Education. The evaluation of the criteria was conducted for two basic reasons: 1) collective bargaining had recently been implemented in the Florida State University System, and 2) state revenue for higher education had suffered a serious decline. These factors were forcing manpower cuts and highlighting the need for as objective and fair a means of faculty evaluation that could be obtained. A random sample of sixty undergraduate and sixty graduate students currently enrolled in the College of Education at Florida Technological

University was obtained. Fifty-four undergraduate students (90%) and fifty-five graduate students (92%) returned usable forms. All of the College of Education faculty and administrators were sent questionnaires and thirty-eight (83%) faculty members and eight administrators (100%) returned usable forms. The Faculty Evaluative Criteria Instrument was altered to include a Likert Scale format. Participants rated each item according to their own perception of the relative importance of each. The ratings were assessed using item frequency distributions, item variances, correlations, internal consistency of the scales, and standard errors of measurement. The data were treated with multivariate analysis of variance and plotted in the smallest space according to multidimensional scaling. Results of the study showed that reliabilities of the seven subscales of the Faculty Evaluative Criteria Instrument ranged from .65 to .97. A null hypothesis was stated for this study and was rejected at the .05 level of significance. The groups (undergraduate students, graduate students, assistant professors, associate professors, full professors, deans, and department chairmen) were plotted in a two-dimensional scale and found to form identifiable clusters. Four clusters emerged and found agreement or disagreement with the subscales of the instruments. These clusters were as follows:

I. Deans, Department Chairmen,
Associate Professors

II. Graduate Students

III. Undergraduate Students,
Assistant Professors

IV. Full Professors

In general, this study indicated:

1. There is a need for a reappraisal of the faculty evaluation instrument.
2. There was little consensus among the role groups, and the perceived validity of the instrument does not appear justified.
3. The participants exhibited disagreement with what should constitute the role of a professor at least for evaluation purposes.
4. Full professors placed heaviest emphasis on the traditional criteria of evaluating faculty: research, publications and academic rank.
5. Students and assistant professors felt that teaching was a more valid criteria to evaluate faculty rather than research, publications and academic rank.
6. Administrators and associate professors appeared to place more emphasis on teaching and creative productions than other criteria.

The study noted the need for further research in the following areas:

1. The use of the Faculty Evaluative Criteria Instrument in the College of Education at Florida Technological University.
2. Investigations into why the disagreements existed between the role groups toward the Faculty Evaluative Criteria Instrument.
3. An analysis of the items within each of the subscales of the instrument.
4. A replication of the study in the other five colleges at Florida Technological University and within the state universities in Florida.

Acknowledgments

The writer wishes to express appreciation to the many persons who so generously assisted during the various stages of this investigation. The cooperation and encouragement of the faculty and administration of the College of Education at Florida Technological University is gratefully acknowledged.

Warm thanks to John Manning, husband and teacher, whose unfailing support throughout the entire period of study and research at Nova University made it possible to initiate, carry through and finally complete the work.

Warm appreciation, also, to Mr. and Mrs. John Cripe, who provided sustaining parental encouragement.

Very special thanks to Dr. Charles Dziuban, friend and advisor, who originated the idea for this investigation, and who was a source of enlightenment and unceasing support, and who gave so generously of his time and expertise.

Special appreciation to Dr. William Robbins, friend and advisor, for the encouragement and guidance given during the writing of this investigation.

Thanks, also, to Mrs. Carol McCrea and Mrs. Janice FitzGerald for their assistance in the editing and typing of this investigation.

TABLE OF CONTENTS

	Page
LIST OF TABLES	ix
LIST OF GRAPHS	x
CHAPTER I	
Introduction	1
Statement of the Problem	1
Background and Significance of the Study	1
Limitations of the Study	4
Summary and Overview of the Project	4
CHAPTER II	
Review of the Literature	7
Student Evaluations of University Professors	7
Faculty Peer Evaluation	10
Administrator Evaluation of University Professors	12
Summary of the Review of Literature	14
CHAPTER III	
Methods and Procedures	16
Subjects Used in the Study	16
Instrumentation	17
Procedures	18
CHAPTER IV	
Data Analysis and Interpretation	20
Results	22
Summary of Chapter Four	38
CHAPTER V	
Summary and Conclusions	40
Summary	40
Summary of Findings	41
Conclusions	43
Recommendations	44
Suggestions for Further Study	46

Page

REFERENCES 49

APPENDICES

A Letter to Participants 55

B Faculty Evaluative Criteria Instrument 56

C New Faculty Salary Formula Information Work Sheet . . . 60

D Item Total Score Correlations 66

E Item Frequency Distributions 67

LIST OF TABLES

Table		Page
1	Total Means and Standard Deivations	23
2	Reliabilities of the Subscales	24
3	Correlations Among the Subscales	26
4	Means and Standard Deviations for the Subscale by Role Groups	27
5	Results of the Multivariate Analysis	30
6	Highest and Lowest Ranking Group on Each Subscale	32
7	Smallest Space Analysis	33
8	Interpoint Distances of the Groups	34
9	Cluster Means	36

LIST OF GRAPHS

Graph		Page
1	Cluster Means for the Seven Subscales	37

CHAPTER I

Introduction

Statement of the Problem

The purpose of the study was to assess agreement among undergraduate and graduate students, faculty, and administrators as to the validity of the criteria which were utilized for promotion and salary considerations in the College of Education at Florida Technological University.

Background and Significance of the Study

During the years from 1973-1975, the problems of faculty evaluation on the higher education campuses in Florida had been given increased attention. At Florida Technological University, a rising wave of activity evolved in the area of faculty evaluations. The emphasis on evaluations had been attributed to the passage of a collective bargaining bill passed by the Florida Legislature in 1974 and to a noticeable decline in State revenue for higher education. The interaction of these two factors had led to increased activity toward work in faculty assessment for change of status, achievement of tenure, dismissal, and salary considerations.

Most Florida campuses had adopted criteria by which to evaluate the overall performance of individual faculty members. The criteria adopted at Florida Technological University included: Academic

Training, Professional Experience, Current Academic Rank, Creative Productions Within the Last Three Years, Teaching Performance, University and Other Service, and Accumulation of Creative Production Items. The Vice President of Academic Affairs for the University issued a memorandum on February 23, 1975, stating:

> . . . each faculty member, tenured or non-tenured, shall be evaluated at least once annually on the basis of his individual total performance in fulfilling responsibilities to the university. The basic purpose of the evaluation is faculty improvement in the functions of teaching, research, service, and any other duties that may be assigned . . .

The Florida Board of Regents had mandated to the State University System that a procedure be established for faculty evaluation of faculty. A procedure had been developed at Florida Technological University whereby each of the six colleges elected a Personnel Committee from its own faculty. This College Personnel Committee was to function as an advisory group to the dean of the college. In addition, a Departmental Evaluation Committee was selected from among the faculty in each department of the various colleges.

A memorandum of June 5th, 1975, by the Vice President of Academic Affairs and the Chairman of the Faculty Senate stated:

> . . . the primary responsibility for developing recommendations for specific criteria to be used for the professional evaluation of faculty must rest with the faculty. Each college and department within the university has the responsibility for defining excellence and competency within each of the five areas evaluated for promotion and tenure (i.e., teaching, research and/or creative activity, service, other university duties, and professional development).

As a result, the College of Education Personnel Committee had requested that it be permitted to make use of data gathered in the present study in order to formulate criteria for promotion and tenure. Two other College Personnel Committees had asked to study the data when it was compiled to aid them in formulating promotional criteria.

The study sought to assess whether agreement existed among students, faculty, and administrators as to the validity of the evaluation criteria for faculty in the College of Education. If positive agreement were demonstrated, then construct type validity would be established; however, if considerable disagreement were demonstrated, then careful reconsideration of the categories should be undertaken. The identification of the specific nature of existing disagreements would highlight areas in which compromise or adjustment might be necessary.

The following null hypothesis was used as a basis for evaluation: There will be no significant difference ($P < .05$) in the summed validity ratings of the Faculty Evaluative Criteria used at Florida Technological University among students, faculty, and administrators in the College of Education.

Limitations of the Study

The findings of this study are based solely on data gathered at Florida Technological University and cannot be generalized beyond the faculty, students, and administrators of the College of Education.

The current Faculty Evaluative Criteria Instrument was the only instrument utilized.

Inasmuch as this investigator was a faculty member in the College of Education, a subject dependency existed in this design.

The sample sizes were unequal in this study.

There were no attempts in this study to assess the method by which the instrument was actually administered or of the use to which the data was put at Florida Technological University. The study concerned only the subjects' generalized validity assessments and did not assess any real/ideal discrepancy which may have existed.

Summary and Overview of the Project

The study was carried out to determine the extent of agreement as to the validity of the Faculty Evaluative Criteria Instrument

used in the College of Education at Florida Technological University and sought to test the degree of agreement that existed among students, faculty, and administrators. The assessment of the instrument was conducted for two basic reasons: 1) collective bargaining had recently been implemented in the Florida State University System; and 2) state revenue for higher education had suffered a serious decline. These factors were forcing manpower cuts and highlighting the need for as objective and as fair a means of selection as could be obtained.

A null hypothesis was stated for this study in order neither to predict nor to indicate any preconceived attitude during the course of the study. The instrument that was used to collect the data was currently in use at the time of the study as a basis for faculty evaluation.

In Chapter Two a review of the current literature will be found, based on studies of students, faculty, and administrator evaluations of university professors. Chapter Three focuses on the methods and procedures utilized to collect the data. The population for the study were students, faculty and administrators in the College of Education at Florida Technological University. The instrumentation used for collecting the data incorporated the existing evaluation instrument and adapted the weighted scales to a Likert Scale. The ratings of the instrument were assessed for

reliability. The findings reported in Chapter Four are based on an analysis and interpretation of the data collected utilizing multivariance of analysis and multidimensional scaling. Chapter Five presents a summary, conclusions, implications, and recommendations of the project as it related to faculty evaluation in the College of Education at Florida Technological University.

CHAPTER II

Review of the Literature

The following sections have been synthesized to bring together portions of research which include data regarding evaluative criteria for university professors. Considerable research has been done in the area of student evaluations, but little has been carried out in the area of peer evaluation and administrator evaluation of university professors. Studies were reviewed in these areas: Student Evaluations of University Professors, Faculty Peer Evaluation, and Administrator Evaluation of University Professors.

Student Evaluations of University Professors

The professional literature is replete with the results of studies on student evaluation of teaching performance. Remmers (1928) concluded that there was virtually no relationship between a student's grades and his judgment of the instructor as recorded on the Purdue Rating Scale. Renner (1967) suggested that students were the ultimate consumers of an instructor's efforts and knew best whether or not he had been effective. Through the years, pressure has been increasing to utilize the results of these student evaluations, especially when a change of status for the instructor might be involved.

According to Oles (1974), since student ratings were already being used for a wide variety of purposes, there had developed a need for continued research on validity, reliability, and utility of the various instruments.

Student evaluation of teaching effectiveness has been studied in more detail than any other indicator of faculty performance. These studies include those done by: French (1957), Canter (1971), Cassel (1971), Grant (1971), Hildebrand (1971), Holmes (1971), McKeachie, et al. (1971), Centra (1972), Magoon (1972), Granzin (1973), Kohlar (1973), Oles (1974), and Wood (1974).

Faculty members typically have voiced reservations about placing the assessment of their contributions, particularly their teaching performance, in the hands of student evaluators. Kohlar (1973), however, found untrue the argument that student ratings were merely a product of popularity. He concluded that students' ratings of instructors, early and late in a class, remained stable. Cassel (1971) determined that student ratings tended to be the most meaningful at the end of a course. Hildebrand (1971) and McKeachie et al. (1971) indicated that student evaluations were considered by many, a valid process for assessing the quality of good teaching.

Holmes (1971) stated:

Because of the increasing external and internal demands being placed on universities for better teaching,

> increasing student concern for the quality of instruction, and the fact that it is becoming increasingly difficult or impossible for administrators to visit and evaluate all classes, there is good reason to believe that in the future the evaluation of instructors by students will be more widespread and relied on more heavily.

Granzin (1973) found the highest correlation of ratings were with the variable of "interesting/entertaining" and concluded that if an instructor had well-chosen materials and well-delivered lectures, high course ratings would result. Grant (1971) determined that faculty rank was not related to student evaluation of courses. The harder students had to work, according to Canter (1971), the higher esteem they placed upon learning. He identified a positive relationship between ratings of course difficulty and course value.

Wood (1974) concluded that class size was significantly related to teaching effectiveness as measured by student evaluations. As the class size increased, the ratings for instructors decreased up to a class size of three hundred, at which point high ratings again occurred. He went on to make the supposition that those high ratings might be due to the department choosing faculty who are adept and effective with large groups.

Centra (1972) found that female teachers were more likely to sense when students did not know the materials, but male teachers

were rated more stimulating and difficult. French (1957) found ten items in teacher characteristics, as measured by a set of verbal statements, which were related to students' high or low opinions of their college professors. The top five items were: 1) interprets abstract ideas and theories clearly; 2) gets students interested in the subject; 3) has increased my skills in thinking; 4) has helped broaden my interests; and 5) stresses important material. These items did not differ according to French from faculty concepts of good teaching.

In current literature, one may find many kinds of evaluative statements regarding the assessment of teaching performance. For instance, Miller (1974) discussed lawsuits which were being filed by professors who believed their professional reputations had been damaged by inadequate student ratings.

Faculty Peer Evaluation

During the academic year of 1975-76, the Florida Board of Regents instituted a requirement that faculty members evaluate their peers. Maslow and Zimmerman (1956), Gutherie (1958), Bridges (1971) and Wilson et al. (1973) have conducted studies of peer evaluations. Wilson et al. (1973) compiled an investigation of the dimensions faculty members and students associated with being a good teacher and developed scales for measuring the characteristics of teaching effectiveness. Five dimensions were identified by

the faculty: Research Activity/Recognition; Intellectual Breadth; Participation in the Academic Community; Relations with Students; and Concern for Teaching. They found a different set of dimensions described by students: Analytic/Synthetic Approach; Organization/Clarity; Instructor-Group Interaction; Instructor-Individual Student Interaction; Dynamism/Enthusiasm. However, when measured by both scales, a strong correlation was found: teachers judged effective according to faculty standards were also found to be effective by student standards. It was concluded that ratings by colleagues should be used to supplement, not replace, ratings by students.

According to Wilson et al. (1973), no research had been reported previously regarding criteria used by college faculty members in evaluating one another or on the correlates of such evaluations. Nevertheless, a study by Astin and Lee (1967) reported that while 49 percent of American colleges and universities made use of colleagues' judgments in evaluating teaching effectiveness, only 12 percent made use of student evaluations.

Subkoviak and Levin (1974) conducted a study to determine the characteristics of an ideal professor using inputs of a college faculty and students. Areas of primary concern among faculty were research, teaching, and service. Students' characterizations of the ideal professor revolved around: teaching, interpersonal

relations, research, and others. The researchers found that students' perceptions of individual faculty members were much more varied than were the corresponding perceptions of colleagues.

Bridges et al. (1971) developed criteria for identifying the characteristics of best and worst college teachers according to preferences stated by students, faculty, and administrators. The items developed assessed enthusiasm, preparation and organization, presentation, class discussion, interest in students, evaluation, and personality. Little attention was given to research and consulting, humility, openness, and use of A-V materials.

Three important points were brought to focus by Smock (1973). In evaluating college faculty he concluded that evaluations should include information from all sources. 1) Colleagues are best able to judge quality and appropriateness of course content and related matters. 2) Departmental administrators are best able to determine whether faculty members fulfill administrative responsibility connected with instruction. 3) Students are best able to judge the effectiveness of the teaching act.

Administrator Evaluation of University Professors

The opinion, so often heard, that administrators tend to evaluate professors on research and the number of publications, tends to be substantiated in studies done by Astin and Lee (1967), Luthan (1967), Hayes (1971), and Braunstein and Benston (1973).

Luthan (1967) pointed to the emphasis deans and departmental chairmen placed on research for promotional considerations. Braunstein and Benston (1973) emphasized that university department chairmen were suspect in evaluating university teaching on the basis of research and publications done by faculty members. According to Astin and Lee (1967), the most frequent sources used by departmental chairmen to evaluate teaching were anecdotal reports and a review of scholarly research and publications. Hayes (1971) found that, although department heads associated good teaching with research ability, students had not made a similar association.

Nevertheless, Bresler (1968) found that in his study of student evaluations, the best instructors were those faculty members who had published articles and who had received or were receiving government support for research.

McDaniel and Feldhusen's (1970) study contradicted Bresler. They found there was no relationship between research activities and instructional effectiveness. They indicated that the most effective instructors were those who had not written any books and had limited their roles as paper and article writers to second authorship. Their findings showed that, since writing took time, a professor may neglect his teaching duties to fulfill his scholarly obligations. Results of their research study showed no relationship

between research activities by grants received and instructional effectiveness.

Grant (1971) found some evidence that as faculty time allocated to research and writing increased, student ratings of courses decreased. Linsky (1972) conducted an in-depth study on the relationship between classroom and research performance of faculty members, and found teaching, as measured by overall student evaluations, essentially uncorrelated with indices of research performance.

Meyer (1965) found that students and faculty disagreed regarding teaching effectiveness and its relationship to research. They speculated that faculty may judge a colleague to be a good teacher if, and only if, he is doing research. Whereas, students believed that the teacher who was poor in the classroom was so because he was spending a major portion of his time on research. Voecks (1962), Feldhusen and McDaniel (1967), and Hoyt (1970) found no significant correlation between number of faculty publications and teaching effectiveness.

Summary of the Review of Literature

The review of literature was undertaken in three areas: student evaluations of university professors, faculty peer evaluations, and administrator evaluation of university professors. Various researches regarding faculty performance reveal a difference in emphasis: students tend to regard as superior those professors

who are interested, open and enthusiastic, but show little concern for their research and scholarly efforts. Faculty members and administrators, on the other hand, tend to hold in highest esteem, those who engage heavily in research and publication achievements, although it has not been shown that such achievements related positively to teaching effectiveness. Such discrepancies lend support to the need already felt at Florida Technological University for a reappraisal of the methods used in evaluating faculty.

CHAPTER III

Methods and Procedures

Procedures utilized in conducting the study, and reviewed in this chapter, include identification of the demographic sample, selection and adaptation of the instrument used to collect the data, administration of the instrument, and the collection and analysis of participant ratings.

Subjects Used in the Study

The subjects in this study were undergraduate and graduate students, faculty, and administrators in the College of Education at Florida Technological University. Sixty undergraduate and sixty graduate students were randomly selected from among those enrolled at the time of the study. The entire faculty and administration were included: forty-six faculty members and eight administrators. Subjects were contacted by letter (Appendix A). They were asked to rate each item on the Faculty Evaluative Criteria Instrument according to the scale given and to return the completed instrument via campus mail.

Sixty graduate students received the Faculty Evaluative Criteria Instrument and ninety-two percent responded (N = 55). Of the sixty undergraduate students selected, ninety percent responded (N = 54). Eighty-three percent of the faculty participated (N = 38). All eight administrators responded (N = 8).

Instrumentation

The Faculty Evaluative Criteria Instrument, which this study appraised (Appendix B), was comprised of twenty-six items divided into seven subscales. These subscales were:

Number of Items	Subscales
3	1. Training
4	2. Professional Experience
2	3. Academic Rank
5	4. Current Creative Productions
4	5. Teaching Items
3	6. University and Other Service
5	7. Accumulation of Creative Production Items

At the time of the study at Florida Technological University, an assigned weight was given for each item (Appendix C). Example: Item 10. "Number of Books (in the field of current employment at FTU or directly related to higher education)." According to the weights assigned for this item, a professor who had published five books would receive six points while another, who had published two books, received three points.

Scale scores were obtained for each subscale and administrative decisions were made based on these totals. This model involved

psychological scaling and was adapted to a Likert Scale for the purposes of this study.

Procedures

Subjects were asked to respond to a Likert Scale regarding the validity of each item included on the evaluative instrument. The scaling was as follows:

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	4	3	2	1

The completed forms were separated according to the category of respondents (students, faculty, and administrators) and the responses summed for each item in order to form scale scores. The validity of items used in this study was assumed since they were the ones in use at Florida Technological University. The purpose of this study was to assess whether or not students, faculty, and administrators perceived the instrument as being valid.

After the subjects responded to the Faculty Evaluative Criteria Instrument, the ratings were assessed for reliability by determining the following:

1. Item Frequency Distributions
2. Item Variances

3. Correlation of the Items with the Total Scale Score

4. Internal Consistency of the Scales (Coefficient Alpha)

5. Standard Errors of Measurement

The subject responses were transformed to machine-readable form (keypunched) on data cards at the Florida Technological University Computer Center (I.B.M. 360/65). The data were initially scrutinized for accuracy using the "Frequencies" of the Statistical Package for the Social Sciences (SPSS) (Nie et al., 1970). Each of the subscale psychometric properties were then determined using the program Likert (Kohr, 1975). Subsequently, the group subscale means were analyzed for differences using the program Multivariance (Finn, 1966). Finally the means for each subscale per group were used as input into the Smallest Space Analysis (S.S.A. I) sub-routine of the Guttman-Lingoes Smallest Space Non-Metric Program Series (Lingoes, 1973) in order to test the null hypothesis at the .05 level of significance.

The printouts were reviewed and the appropriate information transformed into presentation tables, which will be found in Chapter Four.

CHAPTER IV

Data Analysis and Interpretation

The procedures used for this study were multivariate analysis of variance and smallest space analysis. The first method assessed the significance of the differences among the groups while the later procedure was used to determine the relative distances among them.

The group designations for the study were as follows:

Under-graduates	Graduates	Assistant Profs.	Associate Profs.	Full Profs.	Deans	Dept. Chairmen

Within each cell the means for each of the seven subscales were computed. The significant differences ($P < .05$) of those means were tested according to the following model:

$$X = A\xi + \varepsilon \text{ (Tatsuoka, 1971)}$$

where X was the matrix of cell means, A is the design matrix, ξ is the matrix of parameters to be tested and ε is the matrix error variates. A multivariate F ratio for all the dependent

measures was computed as well as univariate F ratio for each of those measures. The program used for the analysis was Multivariance Version IV (Finn, 1966).

In addition, the squared distances among the means for each group were computed.

$$D^2 = \sum_{P_i}^{P_n} (X_j - X_k)^2$$

where D^2 is the distance measured between subjects i and n and the X's represented the dependent measures. The groups were subjected to a research methodology termed multidimensional scaling. Taking each pair of categories in some set of n such categories, the D^2 was computed. Subsequently, the configuration of the points was located in the smallest possible dimensionality such that, to some degree, the interpoint distances (d^2) were monotonically related to the given distance data (d^2) in the sense that

$$d^2_{i_n} < d^2_{l_p}$$

whenever

$$D^2_{i_n} < D^2_{l_p}$$

This resulted in a two-dimensional system which made it possible to plot the individual groups in such a way that they might be visually inspected as well as analytically determined.

The program used for this purpose was the Smallest Space Analysis (SSA-I) of the Guttman-Lingoes Non-Metric Program Series (Lingoes, 1973).

Results

The subscale means, standard deviations, variances and maximum possible scores are reported in Table 1. Since the number of items varied across subscales, direct comparisons are not possible but when compared to the "neutral" point of the scale, some trends emerge. Four of the scales, Training ($\bar{X}$ = 10.71), Professional Experience ($\bar{X}$ = 13.68), Teaching Items ($\bar{X}$ = 13.59), and University and Other Service ($\bar{X}$ = 9.91) were clearly above the neutral point; while two fell below: Current Creative Productions ($\bar{X}$ = 13.18) and Accumulation of Creative Productions ($\bar{X}$ = 13.76). One of the scales, Academic Rank ($\bar{X}$ = 6.03), was located very close to the neutral point.

The subscale reliability coefficients (alpha) and standard errors of measurement are presented in Table 2. A review of those results reveal an unusually high degree of internal consistency given the number of items on each subscale. The lowest alpha coefficients .65 and .66 were obtained for Training and Professional Experience. The two values found to be in the .70's (.75 and .73) were associated with Academic Rank and Teaching Items. Three of the subscales yielded alpha coefficients in the superior range:

Table 1

Total Means and Standard Deviations
(N = 155)

Subscale	$\bar{X}$	SD	SD^2	Neutral	Maximum Possible Score
1. Training	10.71	2.53	6.44	9	15
2. Professional Experience	13.68	3.23	10.47	12	20
3. Academic Rank	6.03	2.03	4.15	6	10
4. Current Creative Production Items	13.18	5.43	29.62	15	25
5. Teaching Items	13.59	3.50	12.26	12	20
6. University and Other Service	9.91	3.19	10.21	9	15
7. Accumulation of Creative Production Items	13.76	6.10	37.46	15	25

Table 2

Reliabilities of the Subscales
(N = 155)

Subscales	Reliability (Alpha)	Standard Error of Measurement	Number of Items
1. Training	.65	1.51	3
2. Professional Experience	.66	1.89	4
3. Academic Rank	.75	1.01	2
4. Current Creative Production Items	.95	1.21	5
5. Teaching Items	.73	1.80	4
6. University and Other Service	.90	1.00	3
7. Accumulation of Creative Production Items	.97	1.11	5

Current Creative Productions, University and Other Service, and Accumulation of Creative Productions (.95, .90, and .97, respectively). Inspection of the standard errors of measurement revealed them to be correspondingly small. The lowest standard error of measurement was for University and Other Service (1.00), and the highest, Professional Experience (1.89).

The Total Score Correlations are found in Appendix D. Item Frequency Distributions are presented in Appendix E.

Intercorrelations among the subscales are presented in Table 3. It may be observed that they were all positive and in the low to moderate range. The lowest correlation ($r = .16$) occurred between Teaching Items and Current Creative Productions. The highest correlation ($r = .66$) occurred between Accumulation of Creative Productions and Current Creative Productions. Teaching Items was most highly related to University and Other Service ($r = .43$) and Training to Professional Experience ($r = .58$). Academic Rank was most positively correlated with University and Other Service ($r = .38$). Close to minimal relationships existed among Training and Current Creative Productions ($r = .29$), Teaching Items ($r = .24$), University and Other Service ($r = .25$), and Accumulation of Creative Productions ($r = .22$).

Means and standard deviations for the subscales by role groups are represented in Table 4 with the results of the significance

Table 3

Correlations Among the Subscales
(N = 155)

Subscales	1	2	3	4	5	6	7
1. Training							
2. Professional Experience	.58						
3. Academic Rank	.48	.48					
4. Current Creative Production Items	.29	.21	.33				
5. Teaching Items	.24	.33	.26	.16			
6. University and Other Service	.25	.37	.38	.29	.43		
7. Accumulation of Creative Production Items	.22	.20	.31	.66	.27	.36	

Table 4

Means and Standard Deviations for the Subscale by Role Groups
(N = 155)

Role Groups	1. Training		2. Professional Experience		3. Academic Rank		4. Current Creative Productions		5. Teaching Items		6. University and Other Service		7. Accumulation of Creative Productions	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Undergraduates (N = 55)	10.15	2.36	13.20	2.94	5.33	1.76	12.15	4.67	13.56	2.75	8.47	3.38	12.15	6.06
Graduates (N = 54)	11.33	1.92	13.89	2.60	6.41	1.68	12.52	4.22	13.63	2.61	10.30	2.49	13.93	5.02
Full Profs.* (N = 3)	13.33	2.08	17.33	2.31	8.67	1.16	22.67	2.52	9.67	6.03	13.67	1.53	21.00	12.50
Assoc. Profs. (N = 14)	11.21	1.81	14.86	2.83	7.14	2.35	16.29	6.64	14.00	4.19	11.14	1.61	17.93	5.33

Table 4

Means and Standard Deviations for the Subscale by Role Groups (Cont'd)
(N = 155)

Role Groups	1. Training		2. Professional Experience		3. Academic Rank		4. Current Creative Productions		5. Teaching Items		6. University and Other Service		7. Accumulation of Creative Productions	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
5. Asst. Profs. (N = 21)	10.81	2.16	14.48	2.27	6.05	1.91	13.48	5.85	13.71	3.59	11.19	2.54	13.29	5.89
6. Deans (N = 3)	10.00	5.29	12.00	7.00	8.00	2.00	18.67	1.53	18.67	2.31	12.33	0.58	20.00	1.73
7. Dept. Chrm. (N = 5)	12.00	1.58	15.20	1.30	6.00	2.35	17.40	7.50	17.20	1.79	13.00	1.58	20.80	2.86

*Note. Since this group sample size is so small, each professor's scores will be given:

1. Professor	15.00	20.00	10.00	25.00	4.00	15.00	20.00
2. Professor	14.00	16.00	8.00	23.00	16.00	12.00	23.00
3. Professor	11.00	16.00	8.00	20.00	9.00	14.00	20.00

28

tests in Table 5. Initially it may be observed that the multivariate test of equality of those means was significant at the .0001 level (Multivariate F = 2.87, D.F. = 42, 669.49). It may be further observed that all of the univariate F ratios were also significant. In the Training Subscale, the most favoring responses were found among Full Professors ($\bar{X}$ = 13.33) with Department Chairmen next ($\bar{X}$ = 12.00). The weakest response was found among Deans ($\bar{X}$ = 10.00 and Undergraduates ($\bar{X}$ = 10.15).

In considering the subscale, Professional Experience, it may be seen that the highest degree of approval was found among Full Professors ($\bar{X}$ = 17.33) and Department Chairmen ($\bar{X}$ = 15.20); least approval on this item was found among Undergraduates ($\bar{X}$ = 13.20) and Deans ($\bar{X}$ = 12.00). On the subscale, Academic Rank, rated lowest by all role groups, Full Professors and Deans gave the highest ratings ($\bar{X}$ = 8.67 and $\bar{X}$ = 8.00, respectively); Undergraduates and Department Chairmen gave the lowest ratings ($\bar{X}$ = 5.33 and $\bar{X}$ = 6.00, respectively).

The Current Creative Productions subscale found strongest approval among Full Professors ($\bar{X}$ = 22.67) and Deans ($\bar{X}$ = 18.67). The two groups who gave least approval on this subscale were Graduates ($\bar{X}$ = 12.52) and Undergraduates ($\bar{X}$ = 12.15).

The Teaching Items subscale found its strongest proponents among Deans ($\bar{X}$ = 18.67) and Department Chairmen ($\bar{X}$ = 17.20);

Table 5

Results of the Multivariate Analysis

Multivariate Test of Equality of Mean Vectors
F = 2.87, D.F. = 42, and 669.49, P < 0.0001

Subscales	Mean Sq	F	P
1. Training	11.51	2.41	.030
2. Professional Experience	16.89	2.18	.048
3. Academic Rank	13.98	4.18	.000
4. Current Creative Productions	110.88	4.53	.000
5. Teaching Items	30.50	3.39	.003
6. University and Other Service	47.09	6.22	.000
7. Accumulation of Creative Productions	125.78	3.93	.001

whereas, the two role groups that favored it least were Undergraduates ($\bar{X}$ = 13.56) and Full Professors ($\bar{X}$ = 9.67). Among Full Professors, Teaching Items rated only above Academic Rank. Full Professors and Department Chairmen showed about the same degree of agreement toward University and Other Service ($\bar{X}$ = 13.67 and $\bar{X}$ = 13.00, respectively), while least favor toward this item was shown among Undergraduates ($\bar{X}$ = 8.47) and Graduates ($\bar{X}$ = 10.30).

Accumulation of Creative Productions, felt to be a relatively important criteria among all groups, was most strongly approved by Full Professors ($\bar{X}$ = 21.00), Department Chairmen ($\bar{X}$ = 20.80), and Deans ($\bar{X}$ = 20.00). The weakest degree of favor shown on this subscale came from Undergraduates ($\bar{X}$ = 12.15) and Assistant Professors ($\bar{X}$ = 13.29).

A summary of the two groups ranking highest and lowest on each subscale is presented in Table 6.

The results of the smallest space analysis of the role groups based upon subscale means is portrayed in Table 7, with the interpoint distances presented in Table 8. It may be observed that a clear and distinct clustering of the role groups was obtained. Undergraduates and Assistant Professors were closest to each other (D = .71). Deans, Department Chairmen and Associate Professors were found in closest proximity (D = .34, .34, .65). The Graduate Students appeared to be centered on a diagonal between Undergraduate

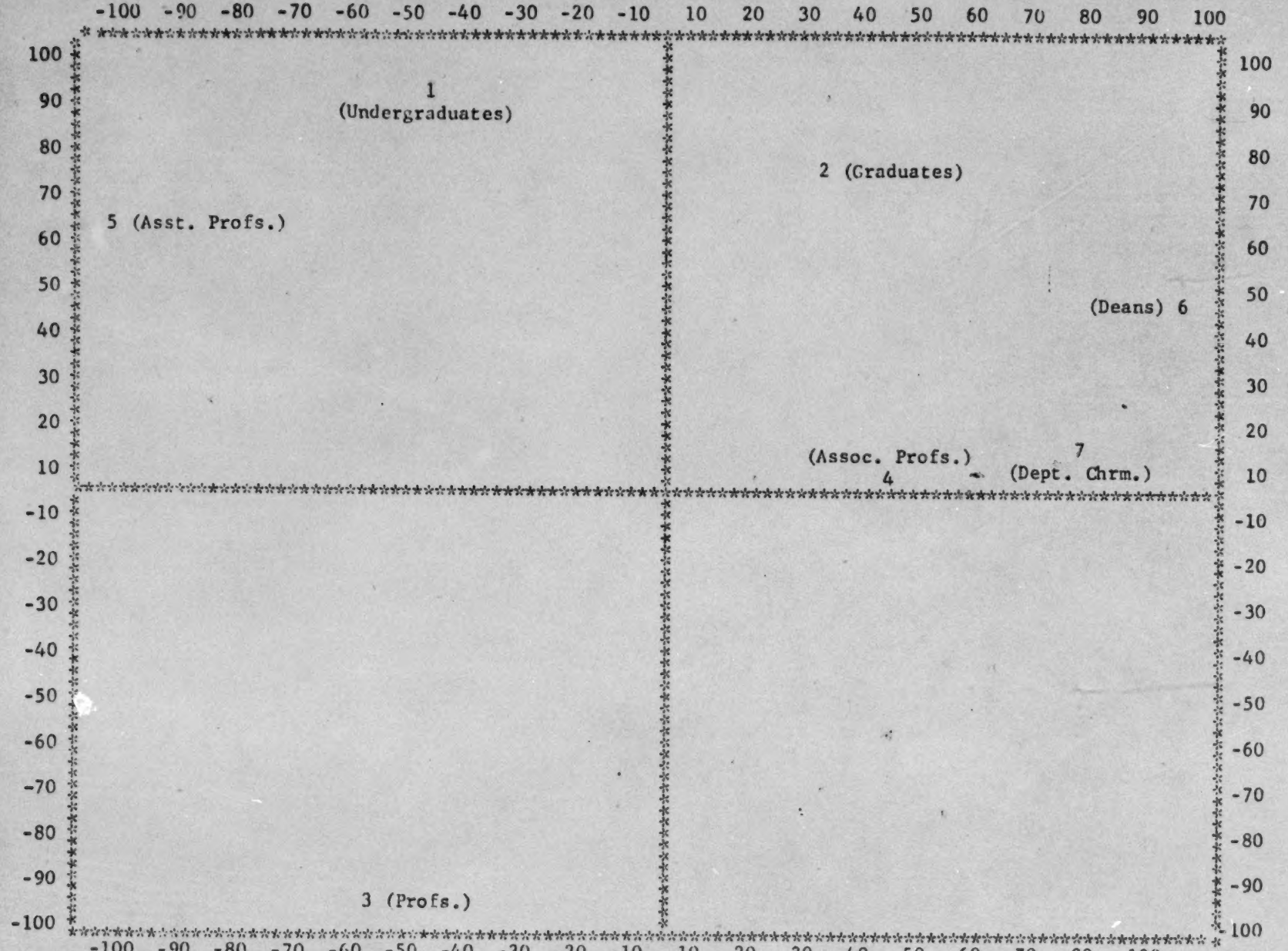
Table 6

Highest and Lowest Ranking Group on Each Subscale

Groups	1. Training	2. Professional Experience	3. Academic Rank	4. Current Creative Productions	5. Teaching Items	6. University and Other Service	7. Accumulation of Creative Productions
Rank 1	Full Profs. $\bar{X}$ = 13.33	Full Profs. $\bar{X}$ = 17.33	Full Profs. $\bar{X}$ = 8.67	Full Profs. $\bar{X}$ = 22.67	Deans $\bar{X}$ = 18.67	Full Profs. $\bar{X}$ = 13.67	Full Profs. $\bar{X}$ = 21.00
Rank 2	Dept. Chrm. $\bar{X}$ = 12.00	Dept. Chrm. $\bar{X}$ = 15.20	Deans $\bar{X}$ = 8.00	Deans $\bar{X}$ = 18.67	Dept. Chrm. $\bar{X}$ = 17.20	Dept. Chrm. $\bar{X}$ = 13.00	Dept. Chrm. $\bar{X}$ = 20.80
Rank 6	Undergrad. $\bar{X}$ = 10.15	Undergrad. $\bar{X}$ = 13.20	Dept. Chrm. $\bar{X}$ = 6.00	Graduates $\bar{X}$ = 12.52	Undergrad. $\bar{X}$ = 13.56	Graduates $\bar{X}$ = 10.30	Asst. Profs. $\bar{X}$ = 13.29
Rank 7	Deans $\bar{X}$ = 10.00	Deans $\bar{X}$ = 12.00	Undergrad. $\bar{X}$ = 5.33	Undergrad. $\bar{X}$ = 12.15	Full Profs. $\bar{X}$ = 9.67	Undergrad. $\bar{X}$ = 8.47	Undergrad. $\bar{X}$ = 12.15

Table 7

Smallest Space Analysis



47 Stress Coefficient = .022

Table 8

Interpoint Distances of the Groups

Groups	1	2	3	4	5	6	7
1. Undergraduates							
2. Graduates	0.78						
3. Professors	2.00	1.94					
4. Associate Professors	1.37	0.80	1.39				
5. Assistant Professors	0.71	1.36	1.73	1.67			
6. Deans	1.49	0.72	2.04	0.65	2.01		
7. Department Chairmen	1.49	0.79	1.71	0.34	1.90	0.34	

Students and Deans. The Full Professors were located the farthest distance from all others (D = 1.93), between Assistant Professors and Graduate Students.

The clusters were organized as follows:

Cluster I = Deans, Department Chairmen, Associate Professors

Cluster II = Graduate Students

Cluster III = Undergraduate Students, Assistant Professors

Cluster IV = Full Professors

The means on each of the subscales for the clusters were computed and are presented in Table 9 and on Graph 1.

Table 9 portrays the cluster of group means as they appear on Graph 1.

Full Professors placed the heaviest emphasis on Training ($\bar{X}$ = 13.33), Professional Experience ($\bar{X}$ = 17.33), Academic Rank ($\bar{X}$ = 8.67), Current Creative Productions ($\bar{X}$ = 22.67) and University and Other Service ($\bar{X}$ = 13.67) than do the other groups. Full Professors place the lowest emphasis on the Teaching Items ($\bar{X}$ = 9.67).

The Deans, Department Chairmen, and Associate Professors gave the heaviest emphasis to Teaching Items ($\bar{X}$ = 16.62). Equal emphasis

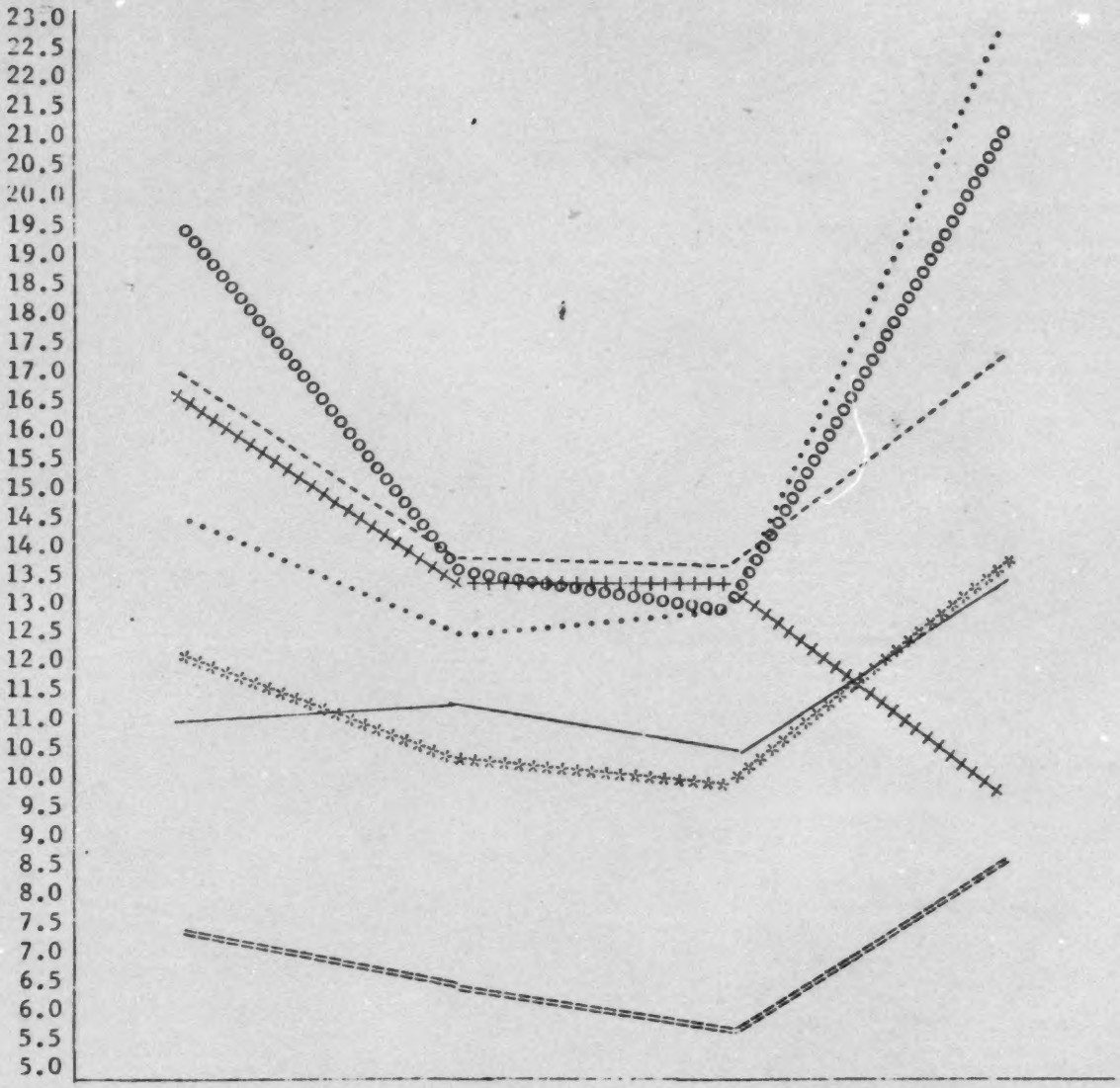
Table 9

Cluster Means

Groups	1. Training	2. Professional Experience	3. Academic Rank	4. Current Creative Productions	5. Teaching Items	6. University and Other Service	7. Accumulation of Creative Productions
1. Dean, Dept. Chairmen, Assoc. Profs.	11.07	17.02	7.04	14.45	16.62	12.15	19.56
2. Grad. Students	11.33	13.89	6.41	12.52	13.63	10.30	13.93
3. Undergraduate Students, Asst. Profs.	10.48	13.84	5.69	12.81	13.63	9.83	12.87
4. Full Profs.	13.33	17.33	8.67	22.67	9.67	13.67	21.00

Graph 1

Cluster Means for the Seven Subscales



was given this item by Graduate Students and Undergraduate Students ($\bar{X}$ = 13.63).

Deans, Department Chairmen and Associate Professors placed strong emphasis on Accumulation of Creative Productions ($\bar{X}$ = 19.56), as did Full Professors ($\bar{X}$ = 21.00). The lowest ratings on this item came from Graduate Students ($\bar{X}$ = 13.93) and Undergraduate Students and Assistant Professors ($\bar{X}$ = 12.87).

The cluster group Undergraduate Students and Assistant Professors rated University and Other Service lower than did any other group ($\bar{X}$ = 9.83).

Summary of Chapter Four

1. The subscales exhibited an acceptable level of internal consistency.
2. The null hypothesis of the equality of the means across the groups was rejected at the .05 level of significance.
3. Clusters appeared which could be associated with measurable differences. The clusters formed were as follows:
   a. Deans, Department Chairmen, Associate Professors
   b. Graduate Students
   c. Undergraduate Students, Assistant Professors
   d. Full Professors

The clustering of these role groups is summarized as follows:

1. Training: Full Professors place heavier emphasis on this subscale than do the other groups.
2. Professional Experience: Full Professors place heavier emphasis on this item than do the other groups.
3. Academic Rank: Full Professors place heavier emphasis on this item than do other groups.
4. Current Creative Productions: Deans, Department Chairmen and Associate Professors and Full Professors place more emphasis on this item than do Undergraduates and Assistant Professors.
5. Teaching: Deans, Department Chairmen and Associate Professors place heavy emphasis here, Full Professors place lower emphasis.
6. University and Other Service: Full Professors place the heaviest emphasis on this item, students the least.
7. Accumulation of Creative Productions: Deans, Department Chairmen and Associate Professors and Full Professors place heavier emphasis here than did Undergraduates and Assistant Professors.

CHAPTER FIVE

Summary and Conclusions

Summary

The study was carried out to assess the extent of agreement as to the validity of the Faculty Evaluative Criteria used in the College of Education at Florida Technological University. The assessment was carried out among students, faculty and administrators. The evaluation of the criteria was conducted for two reasons: 1) collective bargaining had recently been implemented in the Florida State University System, and 2) state revenue for higher education had suffered a serious decline. These factors were forcing manpower cuts and highlighting the need for an objective and fair means of faculty evaluation.

The review of literature focused upon three areas: student evaluation of university professors, faculty peer evaluation, and administrator evaluation of university professors. Various studies regarding faculty performance revealed a difference in emphasis. Students tended to regard as superior those professors who were interested, open and enthusiastic; they were relatively unconcerned about research and scholarly efforts. Faculty members and administrators, on the other hand, tended to hold in highest esteem, those who engaged in research and publication

achievements, although it had not been demonstrated that such achievements related positively to teaching effectiveness.

The study was conducted in the College of Education at Florida Technological University. There were three groups of participants: sixty undergraduate and sixty graduate students (randomly selected), forty-six full time faculty members and eight administrators. Ninety-two percent of the undergraduates and ninety percent of the graduate students returned usable data. Eighty-three percent of the College of Education faculty responded and all of the administrators (Deans and Department Chairmen) returned usable data.

The instrument under consideration was currently in use as the basis of faculty evaluation for promotion and salary considerations. This instrument was altered to a Likert Scale format. Participants in the study rated each item according to their own perception of the relative importance of each. The ratings were assessed using item frequency distributions, item variances, correlations, internal consistency of the scales and standard errors of measurement. The data were treated with multivariate analysis of variance and plotted in the smallest space according to multidimensional scaling.

Summary of Findings

This study utilized a null hypothesis and was rejected at the .05 level of significance. The data indicated the reliabilities of the subscales ranged from .67 to .97.

The groups (Undergraduate Students, Graduate Students, Assistant Professors, Associate Professors, Full Professors, Deans, and Department Chairmen) were plotted in a two dimensional scale and were found to form identifiable clusters. These clusters were as follows:

I. Deans, Department Chairmen, Associate Professors

II. Graduate Students

III. Undergraduate Students and Assistant Professors

IV. Full Professors

The cluster of Deans, Department Chairmen, and Associate Professors held the subscales Professional Experience, Teaching Items, and Accumulation of Creative Productions as more valid criteria for evaluation of a university professor than the subscale Current Creative Productions.

Graduate Students placed the subscale Teaching Items as the most important criteria for evaluating university faculty, and the least important criteria Current and Accumulation of Creative Productions.

Undergraduate Students and Assistant Professors were closely grouped and found Teaching Items of higher importance than any of the other subscales.

Full Professors gave the greatest degree of approval for all the subscales, with the exception of the Teaching Item Subscale.

Conclusions

The results of the data analysis justify the following conclusions:

1. There is a need for a reappraisal of the faculty evaluation instrument on the basis of the findings of this study. The investigator sought to assess the degree of agreement and disagreement among students, faculty and administrators in the College of Education at Florida Technological University. There was little consensus among the role groups. The perceptual validity of the instrument does not appear justified. The respondents exhibited disagreement with what should constitute the role of a university professor at least for evaluation purposes.
2. As a result of plotting the means of the seven groups involved in the study, a distinct clustering of the groups emerged. The groups that clustered formed the following patterns: Administrators and Associate Professors tended to respond alike; Undergraduate Students and Assistant Professors

held views that were similar; Graduate Students formed a group by themselves; and Full Professors were alone in their perceptions of validating criteria for evaluating university faculty. One can, therefore, conclude that certain groups do come together and hold similar views.

3. Full Professors associated themselves with the traditional model of evaluating faculty: they consider the factors of research, publications, (Current and Accumulation of Creative Productions), and Academic Rank. On the other hand, Graduate and Undergraduate Students and Assistant Professors felt that Teaching Items were more valid criteria upon which to evaluate a faculty member than Academic Rank, University and Other Service, and Current and Accumulation of Creative Productions. Associate Professors and Administrators appeared to place more emphasis on the Teaching Items and Accumulation of Creative Productions than upon other criteria.

Recommendations

On the basis of this investigation the following recommendations are made:

1. Since the groups directly concerned with evaluation of faculty members do not agree, it appears that the present evaluation system is in need of reappraisal. It is, therefore, recommended that, using a formal and appropriate process, a committee composed of students, faculty, and administrators be appointed to appraise and revise the Faculty Evaluative Criteria Instrument.
2. Faculty members need to become aware of the role expectations of the collegiate community and devise evaluation instruments applicable to their own area of expertise. University members need to draw attention to programs of staff development, to further refine their own teaching skills, research skills, and other areas that are pertinent to the academician.
3. The Faculty Evaluative Criteria Instrument has several items in the subscale Teaching Items that need to be studied in-depth. For example, among the clusters, the Deans and Department Chairmen indicated the highest approval of this subscale, but there is an interesting imbalance here. The

subscale has four items: 1) Average of student ratings, 2) Chairmen's rating of teaching effectiveness compared to others in the field, 3) Chairmen's rating of counseling, student support, student research support, and 4) Chairmen's rating of research efforts or creative productions. While only one item refers to the evaluations done by students, three items are concerned with evaluation comments by Department Chairmen. It would appear obvious that the Deans and Department Chairmen would hold that this is a valid criterion for assessing the performance of a professor. Nevertheless, this study was not intended to assess the validity of each item, only to find the aggregated ratings of the subscales for each role group and to assess their perceptions of the validity of these subscales. An analysis of each item in the instrument should be undertaken to assess the effectiveness of each criterion for evaluating university faculty.

Suggestions for Further Study

1. A study should be undertaken into the ways the Faculty Evaluative Criteria Instrument is used in

the College of Education at Florida Technological University. Does this instrument provide a fair estimate of a professor's value to the University? Does it provide sufficient data to the purpose of assigning rank and pay increases?

2. Further investigation should inquire into why disagreements existed among role groups in their responses to the Faculty Evaluative Criteria Instrument.
3. Further analysis of the data collected for this study might bring to focus other relationships among the subscales.
4. This study should be replicated in the other five colleges at Florida Technological University in order to gain additional data regarding the validity of the instrument.
5. The study should be replicated at other state universities in Florida.
6. A study to determine the extent of evaluation procedures in the other state universities should be completed. This might lead to a determination of whether there is, or should be, standardized criteria for faculty evaluation within the State University System.

7. Further developmental research should be designed to discover role expectations of university faculty members as perceived by students, faculty and administrators in the College of Education at Florida Technological University.
8. Further studies should be undertaken to analyze the expectations other professional and community groups hold for university professors.

References

Astin, A., & Lee, C. B. T. "Current Practices in the Evaluation and Training of College Teachers." In C. T. Lee (Ed.), Improving College Teaching. Washington, D.C.: American Council on Education, 1967.

Blackburn, R. T. "The Professor's Role in a Changing Society." ERIC Clearinghouse on Higher Education, Washington, D.C., June, 1971. ED 051 438.

Borland, D. J. "Faculty Roles and Academic Rewards." Intellect, January, 1974, 102, 246-9.

Braunstein, D. N., & Benston, G. J. "Student and Department Chairmen Views of the Performance of University Professors." Journal of Applied Psychology, October, 1973, 58, 244-9.

Bresler, J. B. "Teaching Effectiveness and Government Awards." Science, 1968, 160, 1964-7.

Bridges, C. M., Ware, W. B., Brown, B. B., & Greenwood, G. "Characteristics of Best and Worst College Teachers." Science Education, October, 1971, 55, 4, 545-553.

Burton, C. E. College Teaching. New York: Harcourt Brace and Jovanovich, 1956.

Canter, F. M., & Meisels, M. "Cognitive Dissonance and Course Evaluation." Improving College and University Teaching, 1971, 19, 111-3.

Cassel, R. "A Student Course Evaluation: Questionnaire." Improving College and University Teaching, 1971, 13, 3, 204-5.

Centra, J. A. "Two Studies on the Utility of Student Ratings for Instructional Improvement." Esso Education Foundation, Education Testing Service. Princeton, New Jersey, 1972.

Centra, J. A. "Values of Evaluation by Students." Intellect, April, 1973, 101, 416.

Cohen, S. H., & Berger, W. G. "Dimensions of Students' Ratings of College Instructors Underlying Subsequent Achievement on Course Examinations." Proceedings of the 78th Annual Convention of the American Psychological Association, 1970, 5, 605.

Eble, K. E. "Project to Improve College Teaching." Academe, 1970, 4, 3-6.

Feiock, V. L. "Study Reveals Extent of Faculty Services Beyond the Classroom and Assigns Dollar Value to Them." College and University Business, December, 1969, 47, 14.

Feldhusen, J. F., & McDaniel, J. "Unpublished Internal Study on Teaching Effectiveness." Purdue Educational Research Center (Mimeo), 1967.

Finkin, M. W. "Collective Bargaining and University Government." American Association of University Professors Bulletin, 1971, 57, 149-162.

Finn, J. S. "Univariate and Multivariate Analysis of Variance and Covariance: A Program for the IBM 7094 Computer." Research Memorandum No. 3, Statistical Laboratory, Department of Education, The University of Chicago, April, 1966.

French, G. M. "College Students' Concept of Effective Teaching Determined by an Analysis of Teacher Ratings." (Doctoral Dissertation), Dissertation Abstracts International, 1957, 17, 1380-1.

Grant, C. W. "Faculty Allocation of Effort and Student Course Evaluations." The Journal of Educational Research, May, 1971, 64, 405-410.

Granzin, K. L., & Painter, J. J. "A New Explanation for Students' Course Evaluation for Teachers." American Educational Research Journal, Spring, 1973, 10, 115-124.

Grasha, A. F. "Evaluating Teaching: Some Problems." Cincinnati, Ohio: Cincinnati University, Institute for Research and Training in Higher Education, 1972, 4, (ERIC Document Reproduction Service No. ED 071 582).

Gutherie, E. R. "The Evaluation of Teaching." Educational Record, 1949, 30, 109-115.

Halstead, J. S. "Model for Research on Ratings of Courses and Instructors." Proceedings of the 78th Annual Convention of the American Psychological Association, 1970, 5, 612.

Hartley, E. L., & Hogan, T. P. "Some Additional Factors in Student Evaluation of Courses." American Educational Research Journal, Spring, 1972, 9, 241-250.

Harvey, T. R. "An Heretical Approach to Evaluation." Journal of Higher Education, November, 1974, XLV, 628-634.

Hayes, J. R. "Research, Teaching, and Faculty Fate." Science, 1972, 172, 227-230.

Hildebrand, M. "Character and Skills of the Effective Professor." Journal of Higher Education, January, 1973, 44, 41-50.

Hildebrand, M., & Wilson, R. C. "Effective University Teaching and Its Evaluation." Berkeley, Calif: California University, 1970, (ERIC Document Reproduction Service No. ED 039 860).

Hilgert, R. L. "Teacher or Researcher?" The Educational Forum, 1964, 28, 463-8.

Holderfield, H. M., & Brown, F. D. Institutional Responsibility in the Development of Faculty Dismissal Criteria. Tallahassee, Fla: Florida State University, 1973, 69.

Holmes, D. S. "The Teaching Assessment Blank: A Form for the Student Assessment of College Instructors." Journal of Experimental Education, 1971, 39, 34-8.

Hoyt, D. P. "Instructional Effectiveness: III, Interrelationships with Public Record and Monetary Reward." Research Report 10, Office of Educational Research, Manhattan, Kansas: Kansas State University, May, 1970.

Hussain, K. R., & Leestamper, R. "Survey of Criteria of Teaching Effectiveness at New Mexico State University." Las Cruces, New Mexico: New Mexico State University, 1968, (ERIC Document Reproduction Service No. ED 023-365).

Hutchins, R. M. The Learning Society. New York: Frederick A. Praeger Publishers, 1968.

Johansson, C., & Chapman, C. "College Professors--Their Likes and Dislikes." Proceedings of the 78th Annual Convention of the American Psychological Association, 1970, 5, 659.

Kohlar, R. G. "Comparison of Faculty Evaluation Early and Late in the Course: Instructor Evaluation Questionnaire." Journal of Higher Education, November, 1973, 44, 587-595.

Kohr, R. L. "Likert." Pennsylvania Department of Education. University of South Florida Statistical Program Library, Tampa, Florida, 1965.

Lingoes, J. C. The Guttman-Lingoes Nonmetric Program Series. Ann Arbor, Michigan: Mathesis Press, 1973.

Linsky, A., & Straus, M. "Dimensions of Academic Competence: The Relationship of Classroom and Research Performance of College Faculty." Durham, New Hampshire: New Hampshire University, 1972, (ERIC Document Reproduction Service No. ED 063 905).

Luthan, F. The Faculty Promotion Process and Analysis of the Management of Large State Universities. Bureau of Business and Economic Research, College of Business Administration, The University of Iowa City, 1967.

McDaniel, E. D., & Feldhusen, J. F. "Relationships Between Faculty Ratings and Indexes of Service and Scholarships." Proceedings of the 78th Annual Convention of the American Psychological Association, 1970, 5, 619-620.

McKeachie, W. J. "Research on Teaching at the College and University Level." Handbook of Research on Teaching, N. L. Gage, (Ed.), American Educational Research Association, Chicago, Ill: Rand McNally and Co., 1963, 1118-1172.

McKeachie, W. J., Guanglin, Y., & Mann, W. "Student Ratings of Teacher Effectiveness: Validity Studies." American Educational Research Journal, May, 1971, 8, 435.

McKeachie, W. J., & Others. "Research on the Characteristics of Effective College Teaching." Ann Arbor, Mich: Michigan University, 1964, (ERIC Document Reproduction Service No. ED 002 948).

Magoon, A. J., & Price, J. R. "Rating Dimensions of Course and Instructor Characteristics: The Eye of the Beholder." Paper presented at the annual meeting of the American Educational Research Association, April 3, 1972, Chicago, Illinois.

Maslow, A. H., & Zimmerman, W. "College Teaching Ability, Scholarly Activity, and Personality." Journal of Educational Psychology, March, 1956, 47, 185-9.

Meyer, E. E. "Study of Undergraduate Student-Faculty Relationships at a Large University." Unpublished Ph.D. dissertation, University of Wisconsin, 1965.

Miller, R. Developing Programs for Faculty Evaluations. San Francisco: Jossey-Bass Publishers, 1974.

Nie, N., Hull, C. H., Jenkins, J., Steinbrenner, K., & Bent, D. H. SPSS-Statistical Package for the Social Sciences. McGraw-Hill Book Co., New York, 1970.

Oles, H. J. "Stability of Student Evaluations of Instructors and Their Courses." Paper presented at the annual meeting of the American Educational Research Association, April 15, 1974, Chicago, Illinois.

Remmers, H. H. "The College Professor as the Student Sees Him." Purdue University Studies in Higher Education, 1928, 75, N.29.

Renner, R. R. "A Successful Rating Scale." Improving College and University Teaching, 1967, 15, 12-14.

Romney, K., Roger, S., & Nerlove, S. B. (Ed.). Multidimensional Scaling. New York: Seminar Press, Vol. I-Theory, p. 261, Vol. II-Practice, p. 323, 1972.

Smock, H. R., & Crooks, T. J. "Plan for the Comprehensive Evaluation of College Teaching." Journal of Higher Education, November, 1973, 44, 577-586.

Subkoviak, M., & Levin, J. "Determining the Characteristics of the Ideal Professor: An Alternative Approach." Journal of Educational Measurement, Winter, 1974, 11, 269-277.

Tatsuoka, M. M. Multivariate M. Tatsuoka Techniques for Educational and Psychological Research. New York: John Wiley and Sons, 1971.

Voecks, V. W. "Publications and Teaching Effectiveness." The Journal of Higher Education, 1962, 33, 212-218.

Wilson, R. C., Dienst, E. R., & Watson, N. L. "Characteristics of Effective College Teachers as Perceived by Their Colleagues." Journal of Educational Measurement, Spring, 1973, 10, 34-37.

Wood, K., Linsky, A., & Straus, M. "Class Size and Student Evaluations of Faculty." Journal of Higher Education, October, 1974, XLV, 524-534.

APPENDIX A

Letter to Participants

Dear _____ (Student, Faculty, Administrator)

Currently we are engaged in a research study designed to solicit input from students, faculty, and administrators in the College of Education regarding some of the evaluative criteria for university professors at Florida Technological University.

We request your assistance by rating the validity of each item: i.e., whether you feel the category is bona fide and valid for use in the evaluation of a university professor. Please indicate your response by circling the single most appropriate response for each category.

5 Strongly agree this is valid

4 Agree this is valid

3 Neutral

2 Disagree that this is valid

1 Strongly disagree that this is valid

Please place the completed instrument in the envelope and return by campus mail. Thank you for your assistance in this study.

Sincerely,

Patricia C. Manning
Assistant Professor

APPENDIX B

Faculty Evaluative Criteria Instrument

Please Check Appropriate Space:

Student: Undergraduate _____
Graduate _____

Faculty: Professor _____
Assoc. Professor _____
Asst. Professor _____

Administrator: Dean _____
Depart. Chm. _____

Male _____ Female _____

Subscales/Items	Strongly Agree this is valid	Agree this is valid	Neutral	Disagree this is valid	Strongly Disagree this is valid
Training					
1. Highest earned academic degree	5	4	3	2	1
2. Number of years since highest degree earned	5	4	3	2	1
3. Working in discipline of degree earned	5	4	3	2	1
Professional Experience					
4. Years of experience at FTU	5	4	3	2	1
5. Years of experience at other colleges or universities	5	4	3	2	1
6. Years of K-12 experience (teaching or administrative)	5	4	3	2	1
7. Years of other appropriate experience (research, business, etc.)	5	4	3	2	1

Subscales/Items	Strongly Agree this is valid	Agree this is valid	Neutral	Disagree this is valid	Strongly Disagree this is valid
FTU Academic Rank Data					
8. Current academic rank	5	4	3	2	1
9. Number of years in current rank at FTU	5	4	3	2	1
Current Creative Production (Published or presented within past three years)					
10. Number of books (related to current employment or higher education)	5	4	3	2	1
11. Number of articles (published in professional journals)	5	4	3	2	1
12. Number of papers, recitals, plays, etc. (presented at international or national level)	5	4	3	2	1
13. Number of papers, recitals, plays, etc. (presented at regional or state level)	5	4	3	2	1
14. Number of papers, recitals, plays, etc. (presented at the local level)	5	4	3	2	1

Subscales/Items	Strongly Agree this is valid	Agree this is valid	Neutral	Disagree this is valid	Strongly Disagree this is valid
Teaching Items					
15. Average of Student Ratings	5	4	3	2	1
16. Chairman's ratings of teaching effectiveness compared to others in field	5	4	3	2	1
17. Chairman's rating of counseling, student support, student research support	5	4	3	2	1
18. Chairman's rating of research efforts or creative production	5	4	3	2	1
University and Other Service					
19. University service	5	4	3	2	1
20. Departmental Service	5	4	3	2	1
21. Public Service	5	4	3	2	1
Accumulation of Creative Production Items					
22. Books (published in the field of current employment or directly related to higher education)	5	4	3	2	1

Subscales/Items	Strongly Agree this is valid	Agree this is valid	Neutral	Disagree this is valid	Strongly Disagree this is valid
23. Articles (published in professional journals in the field of current employment or directly related to higher education)	5	4	3	2	1
24. Papers, recitals, plays, etc. (presented at the international or national level and in field of current employment at FTU)	5	4	3	2	1
25. Papers, recitals, plays, etc. (presented at the regional or state level and in the field of current employment at FTU)	5	4	3	2	1
26. Papers, recitals, plays, etc. (presented at the local level and in the field of current employment at FTU)	5	4	3	2	1

APPENDIX C

New Faculty Salary Formula Information Work Sheet

Directions: Select the appropriate scaled score and write the corresponding number in the box to the right of each item

Training Items	Scaled Score					
	1	2	3	4	5	6
1. Highest earned academic degree held	Less than Bachelors	Bachelors	Masters or JD	JD or one year or more beyond Masters	ABD and actively working on dissertation	Doctorate
2. Number of years since highest earned academic degree was awarded	0 years	1 to 2 years	3 to 4 years	5 to 6 years	7 to 8 years	9 or more years
3. Working in discipline of highest earned academic degree	No	Yes				

Professional Experience Items	Scaled Score					
	1	2	3	4	5	6
4. Years of experience at FTU	0 years	1 to 2 years	3 to 4 years	5 to 6 years	7 to 8 years	9 or more years
5. Years of experience at other colleges or universities	0 years	1 to 2 years	3 to 4 years	5 to 6 years	7 to 8 years	9 or more years

APPENDIX C (cont'd)

New Faculty Salary Formula
Information Work Sheet

Professional Experience Items (cont'd)	Scaled Score					
	1	2	3	4	5	6
6. Years of K-12 experience (teaching or administrative)	0 years	1 to 2 years	3 to 4 years	5 to 6 years	7 to 8 years	9 or more years
7. Years of other appropriate experience (research, business, etc.)	0 years	1 to 2 years	3 to 4 years	5 to 6 years	7 to 8 years	9 or more years

FTU Academic Rank Data Items	Scaled Score					
	1	2	3	4	5	6
8. Current academic rank (for prospective faculty, assign a scaled score which corresponds to the rank which is being considered)	Adjunct	Instructor	Asst Prof	Assc Prof	Professor	
9. Number of years in current or prospective rank at FTU or elsewhere (the years must be continuous years in the same or equivalent rank)	0 years	1 year	2 years	3 years	4 years	5 or more years

Current Creative Production or Activity Items (published or presented within the past three years)	Scaled Score					
	1	2	3	4	5	6
10. Number of books (in the field of current employment at FTU or directly related to higher education)	0	1	2	3	4	5
11. Number of articles (published in professional journals in the field of current employment at FTU)	0	1-2	3-4	5-6	7-8	9 or more
12. Number of papers, recitals, plays, etc. (presented at the international or national level and in the field of current employment at FTU)	0	1-2	3-4	5-6	7-8	9 or more
13. Number of papers, recitals, plays, etc. (presented at the regional or state level and in the field of current employment at FTU)	0	1-3	4-6	7-9	10-12	13 or more
14. Number of papers, recitals, plays, etc. (presented at the local level and in the field of current employment at FTU)	0	1-4	5-8	9-12	13-16	17 or more

APPENDIX C (cont'd)

Teaching Related Items	Scaled Score				
	1	2	3	4	5
15. Three quarter average student rating--Inst. Evaluation (if new faculty, use an estimate which is based on objective data from the faculty member's folder)	2.40 or less	2.41 to 2.80	2.81 to 3.20	3.21 to 3.60	3.61 to 4.0
16. Chairman's rating of teaching effectiveness as compared to others in the field (for new faculty use a scaled score of 3 or make an estimate)	Unsatisfactory	Acceptable	Average	Good	Superior
17. Chairman's rating of counseling, student support, and student research support effectiveness as compared to others in the field (for new faculty use a scaled score of 3 or make an estimate)	Unsatisfactory	Acceptable	Average	Good	Superior
18. Chairman's rating of research efforts or creative production as compared to others in the field	Unsatisfactory	Acceptable	Average	Good	Superior

APPENDIX C (cont'd)

University & Other Service Items	Scaled Score				
	1	2	3	4	5
19. University service (Chairman's rating as compared to others within the University) (for new faculty, assign a scaled score of 3 unless the Faculty File suggests a different score)	Unsatisfactory	Acceptable	Average	Good	Superior
20. Departmental service (Chairman's rating of faculty member's willingness to support departmental goals after all divergent opinions have been heard and a decision has been agreed on by the department)	Unsatisfactory	Acceptable	Average	Good	Superior
21. Public service (Chairman's rating as compared to others within the University) (for new faculty assign the scaled score of 3 unless the Faculty File suggests a different score)	Unsatisfactory	Acceptable	Average	Good	Superior

Accumulation of Creative Production Items	Scaled Score					
	1	2	3	4	5	6
22. Books* (published in the field of current employment at FTU or directly related to higher education)	0 points	1-5 points	6-10 points	11-15 points	16-20 points	21 or more points

APPENDIX C (cont'd)

Accumulation of Creative Production Items (cont'd)	Scaled Score					
	1	2	3	4	5	6
23. Articles* (published in professional journals and in the field of current employment at FTU or directly related to higher education)	0 points	1-10 points	11-20 points	21-30 points	31-40 points	41 or more points
24. Papers,* recitals, plays, etc. (presented at the international or national level and in the field of current employment at FTU)	0 points	1-10 points	11-20 points	21-30 points	31-40 points	41 or more points
25. Papers,* recitals, plays, etc. (presented at the regional or state level and in the field of current employment at FTU)	0 points	1-10 points	11-20 points	21-30 points	31-40 points	41 or more points
26. Papers,* recitals, plays, etc. (presented at the local level and in the field of current employment at FTU)	0 points	1-10 points	11-20 points	21-30 points	31-40 points	41 or more points

* In determining the appropriate standard score for each variable considered, assign a weighted value for each publication in the opposite order of the number of years since it was published, etc. (i.e., 9 years or more: 1 point, 7-8 years: 2 points, 5-6 years: 3 points, 3-4 years: 4 points, 0-2 years: 5 points)

APPENDIX D

Item Total Score Correlations

Subscale	Item	r
I. Training	1. Highest earned degree	.69
	2. Number of years since highest degree earned	.61
	3. Working in discipline of degree	.55
II. Professional Experience	4. Years of experience at FTU	.48
	5. Years of experience at other universities	.72
	6. Years of K-12 experience (teaching or administrative)	.61
	7. Years of other appropriate experience (business)	.46
III. Academic Rank	8. Current academic rank	.79
	9. Number of years in current rank at FTU	.76
IV. Current Creative Production	10. Number of books (related to higher education) last 3 years	.80
	11. Number of articles (published in prof. journals)	.92
	12. Number of papers, recitals, plays (international or national level)	.93
	13. Number of papers, recitals, plays (regional, state)	.92
	14. Number of papers, recitals, plays (local)	.84
V. Teaching Items	15. Average of student ratings	.29
	16. Chairman's ratings of teaching effectiveness compared to others in field	.85
	17. Chairman's rating of counseling, student support, student research support	.81
	18. Chairman's rating of research efforts or creative production	.66
VI. University and Other Service	19. University service	.90
	20. Departmental service	.92
	21. Public service	.79
VII. Accumulation of Creative Production Items	22. Books (published in field or related to higher education)	.88
	23. Articles (professional journals related to field of higher education)	.97
	24. Papers, recitals, plays, (international or national)	.95
	25. Papers, recitals, plays (regional or State)	.96
	26. Papers, recitals, plays, etc. (local level)	.88

APPENDIX E

Item Frequency Distributions
(Adjusted Item-Total Correlations)

Subscales/Items	Freq./Prop.	Omit	SD 1	D 2	N 3	A 4	SA 5
Subscale I							
Item 1	Low Freq.	3	4	13	32	34	6
	Prop.	.03	.03	.14	.35	.37	.07
	High Freq.	0	0	0	0	9	20
	Prop.	.00	.00	.00	.00	.31	.69
Item 2	Low Freq.	3	8	30	33	17	1
	Prop.	.03	.09	.33	.36	.18	.01
	High Freq.	0	0	0	2	19	8
	Prop.	.00	.00	.00	.07	.66	.28
Item 3	Low Freq.	5	2	8	20	42	15
	Prop.	.05	.02	.09	.22	.46	.16
	High Freq.	0	0	0	1	5	23
	Prop.	.00	.00	.00	.03	.17	.79
Subscale II							
Item 4	Low Freq.	3	15	25	14	5	0
	Prop.	.05	.24	.40	.23	.08	.00
	High Freq.	0	0	0	3	10	9
	Prop.	.00	.00	.00	.14	.45	.41
Item 5	Low Freq.	3	7	22	17	12	1
	Prop.	.05	.11	.35	.27	.19	.02
	High Freq.	0	0	0	0	8	14
	Prop.	.00	.00	.00	.00	.36	.64

APPENDIX E (Cont'd) Item Frequency Distributions

Subscales/Items	Freq./Prop.	Omit	SD 1	D 2	N 3	A 4	SA 5
Item 6	Low Freq.	4	6	8	14	22	8
	Prop.	.06	.10	.13	.23	.35	.13
	High Freq.	0	0	0	1	6	15
	Prop.	.00	.00	.00	.05	.27	.68
Item 7	Low Freq.	4	5	8	18	22	5
	Prop.	.06	.08	.13	.29	.35	.08
	High Freq.	0	0	0	2	14	6
	Prop.	.00	.00	.00	.09	.64	.27
Subscale III							
Item 8	Low Freq.	3	12	26	45	12	0
	Prop.	.03	.12	.27	.46	.12	.00
	High Freq.	0	0	0	0	2	7
	Prop.	.00	.00	.00	.00	.22	.78
Item 9	Low Freq.	2	20	32	39	4	1
	Prop.	.02	.20	.33	.40	.04	.01
	High Freq.	0	0	0	0	1	8
	Prop.	.00	.00	.00	.00	.11	.89
Subscale IV							
Item 10	Low Freq.	2	31	34	1	0	0
	Prop.	.03	.46	.50	.01	.00	.00
	High Freq.	0	0	1	10	23	5
	Prop.	.00	.00	.03	.26	.59	.13
Item 11	Low Freq.	2	32	34	0	0	0
	Prop.	.03	.47	.50	.00	.00	.00
	High Freq.	0	0	0	4	29	6
	Prop.	.00	.00	.00	.10	.74	.15

APPENDIX E (cont'd) Item Frequency Distributions

Subscales/Items	Freq./Prop.	Omit	SD 1	D 2	N 3	A 4	SA 5
Item 12	Low Freq.	2	28	38	0	0	0
	Prop.	.03	.41	.56	.00	.00	.00
	High Freq.	0	0	0	3	31	5
	Prop.	.00	.00	.00	.08	.79	.13
Subscale IV							
Item 13	Low Freq.	2	24	39	1	2	0
	Prop.	.03	.35	.57	.01	.03	.00
	High Freq.	0	0	0	2	30	7
	Prop.	.00	.00	.00	.05	.77	.18
Item 14	Low Freq.	2	22	38	2	3	1
	Prop.	.03	.32	.56	.03	.04	.01
	High Freq.	0	0	0	1	32	6
	Prop.	.00	.00	.00	.03	.82	.15
Subscale V							
Item 15	Low Freq.	4	10	9	15	44	11
	Prop.	.06	.14	.13	.21	.31	.15
	High Freq.	0	0	0	0	6	15
	Prop.	.00	.00	.00	.00	.29	.71
Item 16	Low Freq.	2	8	25	22	14	0
	Prop.	.03	.11	.35	.31	.20	.00
	High Freq.	0	0	0	0	2	19
	Prop.	.00	.00	.00	.00	.10	.90
Item 17	Low Freq.	2	6	22	25	13	3
	Prop.	.03	.08	.31	.35	.18	.04
	High Freq.	0	0	0	0	5	16
	Prop.	.00	.00	.00	.00	.24	.76

APPENDIX E (cont'd) Item Frequency Distributions

Subscales/Items	Freq./Prop.	Omit	SD 1	D 2	N 3	A 4	SA 5
Item 18	Low Freq.	4	13	20	24	9	1
	Prop.	.06	.18	.28	.34	.13	.01
	High Freq.	0	0	0	5	8	8
	Prop.	.00	.00	.00	.24	.38	.38
Subscale VI							
Item 19	Low Freq.	5	9	19	34	10	1
	Prop.	.06	.12	.24	.44	.13	.01
	High Freq.	0	0	0	0	11	12
	Prop.	.00	.00	.00	.00	.48	.52
Item 20	Low Freq.	4	8	18	35	13	0
	Prop.	.05	.10	.23	.45	.17	.00
	High Freq.	0	0	0	0	5	18
	Prop.	.00	.00	.00	.00	.22	.78
Item 21	Low Freq.	4	10	25	33	5	1
	Prop.	.05	.13	.32	.42	.06	.01
	High Freq.	0	0	0	1	9	13
	Prop.	.00	.00	.00	.04	.39	.57
Subscale VII							
Item 22	Low Freq.	7	20	30	2	0	1
	Prop.	.12	.33	.50	.03	.00	.02
	High Freq.	0	0	0	3	25	10
	Prop.	.00	.00	.00	.08	.66	.26
Item 23	Low Freq.	7	20	32	1	0	0
	Prop.	.12	.33	.53	.02	.00	.00
	High Freq.	0	0	0	1	28	9
	Prop.	.00	.00	.00	.03	.74	.24

APPENDIX E (cont'd) Item Frequency Distributions

Subscales/Items	Freq./Prop.	Omit	SD 1	D 2	N 3	A 4	SA 5
Item 24	Low Freq.	7	22	30	1	0	0
	Prop.	.12	.37	.50	.02	.00	.00
	High Freq.	0	0	0	0	30	8
	Prop.	.00	.00	.00	.00	.79	.21
Item 25	Low Freq.	7	21	32	0	0	0
	Prop.	.12	.35	.53	.00	.00	.00
	High Freq.	0	0	0	0	28	10
	Prop.	.00	.00	.00	.00	.74	.26
Item 26	Low Freq.	11	18	30	1	0	0
	Prop.	.18	.30	.50	.02	.00	.00
	High Freq.	0	0	0	0	29	9
	Prop.	.00	.00	.00	.00	.76	.24